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10/651,854	08/29/2003	Rohit Puri	010030-000310US	8133

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EXAMINER	
GE, YUZHEN	

ART UNIT	PAPER NUMBER
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/651,854	PURI ET AL.	
	Examiner	Art Unit	
	Yuzhen Ge	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-33* is/are pending in the application.

4a) Of the above claim(s) *27-29* is/are withdrawn from consideration.

5)☒ Claim(s) *30-32* is/are allowed.

6)☒ Claim(s) *1-3,5-26 and 33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Examiner's Remark

Applicant's amendment, filed on July 20, 2007 has been received and entered into the file. Claims 1, 17-20 and 25-26 have been amended. Claim 4 is canceled. Claims 1-3, 5-26 and 30-33 are pending.

Regarding applicant's argument to traverse the rejection of 112 1st paragraph rejection of claim 16, the examiner disagrees that an ordinary skill in the art would know how to use the 14 different syndrome coding classes because it is not disclosed in the specification what these 14 syndrome coding classes are. The specification on page 11 merely discloses that 14 syndrome coding classes are between two extremes of coding modes, i.e., skip mode and intra mode. But what are these 14 syndrome coding classes or modes? How can an ordinary skill use these classes or modes without knowing what they are? Why there are 14 of them instead of 3 of them? Although an ordinary skill in the art may appreciate the 14 different syndrome coding classes/modes, but he/she would not be able to use these classes/modes. Therefore the 112 1st paragraph rejection of claim 16 has not been overcome.

Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 16 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which

it is most nearly connected, to make and/or use the invention. It recites that 16 different classifications are used including 14 syndrome coding classes. However it is not clear from the specification what are the 14 syndrome coding classes. Therefore the claimed subject matter is not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim Rejections - 35 USC § 102

2. Claims 1-3, 5-12, 15, and 17-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Abousleman (US Patent 6,661,842).

Regarding claim 1, Abousleman teaches a method for encoding digital information, the method comprising

identifying a target code word that represents at least a portion of the digital information (Figs. 1, 4-5, 12, 14 and 18-19, col. 12, lines 62-67, col. 7, lines 15-41, a sample in the sample set is a target word);

determining a set of a plurality of code words, wherein the set includes the target code word (Figs. 1, 4-5, 12, 14, col. 12, lines 62-67, col. 7, lines 34-41, col. 14, line 52-col. 15, line 10); and

selecting an index, wherein the index indicates the determined set (Figs. 1, 4-5, 12, 14 and 18-19, col. 12, lines 62-67, col. 7, lines 34-41, col. 14, line 52-col. 15, line 23, the subset index is selected).

determining a check value for the target code word (Figs. 1, 4-5, 12, and 14, col. 12, lines 62-67, col. 7, lines 34-41, col. 14, line 52-col. 15, line 52, the codeword index can be regarded as the check value); and

sending the check value and the index to a decoder, the index allowing identification of the set of the plurality of code words and the check value allowing the target code word to be determined from the set (Figs. 1, 4-5, 12, 14, and 18-19, col. 12, lines 62-67, col. 7, lines 34-41, col. 14, line 52-col. 15, line 52, col. 16, lines 51-55, col. 21, line 62-col. 22, line 13).

Regarding claim 2, Abousleman teaches the method of claim 1, further comprising defining a plurality of sets of code words (Figs. 1, 4-5, 12, 14-15, and 18-19, col. 12, lines 62-67, col. 7, lines 15-41, col. 14, line 52-col. 15, line 52, col. 16, lines 51-55, col. 21, line 62-col. 22, line 13).

Regarding claim 3, Abousleman teaches the method of claim 2, further comprising defining a partition of sets of code words (Figs. 1, 4-5, 12, 14-15, and 18-19, col. 12, lines 62-67, col. 7, lines 15-41, col. 14, line 52-col. 15, line 52, col. 16, lines 51-55, col. 21, line 62-col. 22, line 13).

Regarding claim 5, Abousleman teaches the method of claim 1, wherein the target code word indicates one or more pixel values in digital video information (Figs. 1, 4-5, 12, 14 and 18-19, col. 12, lines 62-67, col. 7, lines 15-41, a sample in the sample set is a target word).

Regarding claim 6, Abousleman teaches the method of claim 1, wherein the target code word indicates a macro block in a frame of digital video information (Figs. 1, 4-5, 12, 14 and 18-19, col. 12, lines 62-67, col. 7, lines 15-41, a sample in the sample set is a target word).

Regarding claim 7, Abousleman teaches the method of claim 1, further comprising quantizing the target code word (col. 4, lines 64-66, Figs. 4 and 18, col. 10, lines 16-22).

Regarding claim 8, Abousleman teaches the method of claim 7, wherein the digital information includes digital video information including frames and wherein the target code word is encoded using intra-coding within a given frame of the digital video information (Figs. 1-4, col. 4, lines 34-50, the initial frame, for example, is intra-coded).

Regarding claim 9, Abousleman teaches the method of claim 8. Abousleman further teaches using motion prediction is used to determine a correlation noise value; and using the correlation noise value to partition a plurality of code word values into a plurality of sets (col. 15, line 37-col. 16, line 52, Figs. 7-9, col. 11, line 14-col. 12, line 2, col. 15, lines 4-10).

Regarding claim 10, Abousleman teaches the method of claim 1, further comprising transforming at least a portion of the digital information from a spatial domain into a frequency domain (Abstract, Figs. 4-6, col. 4, lines 34-50).

Regarding claim 11, Abousleman teaches the method of claim 10, wherein the step of transforming includes a substep of using a discrete cosine transform (Figs. 4-6, col. 4, lines 34-50).

Regarding claim 12, Abousleman teaches the method of claim 1, further comprising classifying blocks of the digital information for subsequent processing (Figs. 7-10).

Regarding claim 15, Abousleman teaches the method of claim 12, further comprising performing varying degrees of encoding in response to the step of classifying blocks (col. 12, lines 35-38, col. 13, lines 1-6, col. 13, lines 25-37).

Claims 17 and 18 are the corresponding apparatus and computer-readable medium claims of claim 1. Abousleman teaches an apparatus and a computer-readable medium (Figs. 1 and 2, col. 8, lines 48-51). Thus Abousleman teaches claim 17-18 as evidently explained in the above-cited passages.

Claim Rejections - 35 USC § 103

3. Claims 13-14 are rejected under 35 U.S.C (103(a) as being unpatentable over Abousleman in view of Jozawa et al (US Patent 6,785,331).

Regarding claim 13, Abousleman and Jozawa et al teach the method of claim 12. However he does not explicitly teach skipping encoding a block in response to the step of classifying blocks.

Jozawa et al further teach skipping encoding a block in response to the step of classifying blocks (col. 5, lines 51-65). It is desirable to be efficient when encoding. When a block does not change much compared with a block in a reference frame, it does not need to be coded. Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method of Jozawa et al to skipping encoding a block to improve the encoding efficiency.

Regarding claim 14, Abousleman teaches the method of claim 12. . However he does not explicitly teach wherein the target code word is encoded using intra-coding within a given frame of the digital video information in response to the step of classifying blocks. In the same field of endeavor, Jozawa et al teach intra-coding a block in response to the step of classifying blocks (col. 5, lines 20-42, if VOP_TYPE = I, then it is intra-coded). It is well known in the art, that intra-coding provides better quality at the cost of more time and resources used and to maintain quality pictures that are very different from the previous ones need to be intra-coded. It is desirable to maintain visual quality of coded video pictures. Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to intra-coding a block in response to the step of classifying blocks so that the quality of video pictures can be maintained.

4. Claims 19-26 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abousleman (US Patent 6,661,842) in view of Fiske (US Patent 7042,587).

Regarding claim 19, Abousleman teaches a method for decoding encoded digital information, the method comprising

receiving an index (col. 23, lines 24-35, col. 15, lines 1-10, col. 15, lines 19-23, col. 16, lines 7-16, col. 16, lines 40-55, Figs. 1, 14-15, 21);

using the index to determine a set of candidate code words (col. 17, lines 3-67, col. 16, lines 7-16, col. 15, lines 1-10, col. 15, lines 19-23, col. 16, lines 7-16, col. 16, lines 40-55, Figs. 1, 14-15, 21);

inferring a set of cues (col. 23, lines 24-44, cost of the path can be regarded as one of the cues, col. 15, lines 1-10, col. 15, lines 19-23, col. 16, lines 7-16, col. 16, lines 40-55, Figs. 1, 14-15, 21);

determining a code word by operating on the code words in the set of candidate code words with a cue (col. 15, lines 1-10, col. 15, lines 19-23, col. 16, lines 7-16, col. 16, lines 40-55, Figs. 1, 14-15, 21, col. 23, lines 24-44); and

using the target code word in a decoding operation (col. 23, lines 24-44, col. 15, lines 1-10, col. 15, lines 19-23, col. 16, lines 7-16, col. 16, lines 40-55, Figs. 1, 14-15, 21).

However they do not explicitly teach receiving a check value and determining if the determined code word is the target code word when a check value is determined for the code word that corresponds to the received check value. In the same field of endeavor, Fiske teaches receiving a check value and determining if the determined code word is the target code word when a check value is determined for the code word that corresponds to the received check value (col. 6, lines 40-59 and Fig. 6). It is desirable to uniquely identify the content of a file or a block of data (col. 6, lines 40-59 of Fiske). Therefore it would have been obvious to one of ordinary skill in the art,

at the time of invention, to use the method of Fiske to determine if a code word is the target code word so that the target code word can be uniquely identified).

Regarding claim 20, Abousleman and Fiske teach the method of claim 19. Abousleman further teach determining a cue in the set of cues and using the cue to determine a code word in the code words in the set (col. 23, lines 24-44, cost of the path can be regarded as cues, col. 15, lines 1-10, col. 15, lines 19-23, col. 16, lines 7-16, col. 16, lines 40-55, Figs. 1, 14-15, 21). However Abousleman do not explicitly teach determining whether an operation with a cue performed on a code word produces a value that is in agreement with a check value. In the same field of endeavor, Fiske teaches determining whether an operation with a cue performed on a code word produces a value that is in agreement with a check value (col. 6, lines 40-59, Fig. 6). Checksum is used commonly in the art and determining whether checksum matches is also routinely done in the art. It is desirable to detect whether error has occurred during transmission of a video signal. Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method Fiske to determine whether an error has occurred.

Regarding claim 21, Abousleman and Fiske teach the method of claim 19. Abousleman further teaches wherein the cue includes a motion-based predictor (Figs. 1-3, col. 3, line 28-col. 4, line 33, the predictor needs to be inferred in order to decode).

Regarding claim 22, Abousleman and Fiske teach the method of claim 21. Abousleman further teach wherein the step of inferring a cue includes a substep of deriving the motion-based

predictor (Figs. 1-3, col. 3, line 28-col. 4, line 33, the motion-based predictor is derived in order to decode, also inherent from MPEG, col. 1, lines 13-20).

Regarding claim 23, Abousleman and Fiske teach the method of claim 22. Abousleman further teach wherein the encoded digital information includes blocks of video information, the method further comprising decoding the encoded digital information by using the predictor and one or more code words (Figs. 1-3, col. 3, line 28-col. 4, line 33, Figs. 4-5, 12, 14 and 18-19, col. 12, lines 62-67, col. 7, lines 15-41, a sample in the sample set is a target word).

Regarding claim 24, Abousleman and Fiske teach the method of claim 23. Abousleman further teaches the method comprising estimating the best way to decode the encoded digital information by using the predictor and the one or more code words (Figs. 1-2, col. line 28-col. 4, line 6, col. 18, lines 1-67, col. 23, lines 24-36, following the lowest cost path is estimated to be the best way when decoding).

Claims 25 and 26 are the corresponding apparatus and computer-readable medium claims of claim 19. Abousleman teaches an apparatus and a computer-readable medium (Figs. 1 and 2, abstract, computer medium is inherent from a computer implemented method, col. 12, lines 53-61). Thus Abousleman and Fiske teach claim 25-26 as evidently explained in the above-cited passages.

Regarding claim 33, Abousleman teaches the method of claim 19, wherein the encoded digital information corresponds to a source that can be compressed by predictive coding, wherein the decoder includes two or more cues (col. 16, lines 17-39, col. 22, lines 1-14, col. 21, line 62-col. 22, line 43, Figs. 1-4, the hamming distance the transition probability, etc. can be regarded as one of the cues). However they do not explicitly teach that the cues produce a value that is in agreement with the check value to result in successful recovery of the target codeword. Fiske teaches determining whether an operation with a cue performed on a code word produces a value that is in agreement with a check value to result in successful recovery of a target codeword (col. 6, lines 40-59, Fig. 6).

Checksum is used commonly in the art and determining whether checksum matches is also routinely done in the art. It is desirable to detect whether error has occurred during transmission of a video signal and to verify whether successful recovery of a target codeword can be achieved. Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method Fiske to determine that the check sum matches and a successful recovery is resulted.

Allowable Subject Matter

5. Claims 30-32 are allowed. An examiner's statement of reasons for allowance is presented in the previous office action and will not be repeated here.

Examiner's Remark

6. Claim 16 cannot be rejected over the prior art. The reason that it cannot be rejected over prior art is: wherein 16 different classifications are used including 14 syndrome coding classes.

Other prior art

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is listed in the following: US Patent 6,332,003 B1, by Matsuura et al and US Patent (6,950,469 B2), by Karczewicz et al.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuzhen Ge whose telephone number is 571-272 7636. The examiner can normally be reached on 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Yuzhen Ge
Examiner
Art Unit 2624

WENPENG CHEN
PRIMARY EXAMINER

9/5/07